Energy - Docket Optical System

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Comments on EPIC Strategic Objective #19 – "Facilitate Emerging Energy Technologies into the Procurement Process of Large Purchasers."

As a representative of a major U.S. engineering firm in California, I appreciate the opportunity to support the EPIC program, and through these efforts the overall success of renewable energy technology developers and firms, including disadvantaged business enterprises (DBE).

Through experience with the sustainable technology deployment programs of the Los Angeles ports, with technology commercialization from Caltech/JPL, and with applied technology from USDOT research projects, I have learned that engineering firms often play a valuable role in evaluating new technologies and products to be used in large capital projects.

For example, in recent years, the Ports of Los Angeles and Long Beach implemented a $2 billion Clean Air Action Plan (CAAP). The CAAP called for a broad array of new technologies for air emissions control, electric vehicles, alternatively powered railroad systems, new fuels, industrial energy processes, and other systems. It included a technology funding component, the Technology Advancement Program (TAP), with a funding level of $15 million.

Many technology companies rallied to the perceived new market, and spent considerable time pursuing it, hoping to integrate their technologies into the anticipated $8 billion of planned port expansion projects which optimally would use these technologies. However, each of the technology firms found, after months of presentations and positioning with the ports, that the ports usually were not the buyers of their technology. The buyers were, instead, the port tenants, often global shipping companies, major national railroads, or large industrial firms such as petroleum companies. Each of these firms, in turn, would generally procure new technologies through completion of large integrated projects designed by major engineering firms.

Representative firms include Burns & McDonnell, AECOM, Parsons, Parsons Brinckerhoff, URS, Tetra Tech, and other organizations, many based in California or with large offices here. These firms are global, diversified in expertise, with thousands of employees around the world, who are assigned to projects on a task-by-task basis. These engineering firms, and their employees, are extremely busy, are risk averse to the use of new technologies, are constrained by cost and schedule in delivering projects, and are therefore unlikely to be receptive to even some of the most promising new technologies. In addition, some of the firms have a "not invented here" view, so they would favor technologies which they had developed internally, and be resistant to others.

Finally, the buying decisions made by engineering firms tend to be delegated to the lowest, most junior (and therefore inexpensive to the client) of the firm's staff. These individuals are generally committed to projects

up to 95% of their time. Therefore, they have little time to meet with vendors or developers of new technology. Consequently, they are unlikely to know about, or "specify" within a project's procurement process, new technologies for their clients.

Therefore, a methodology must be identified to engage the California engineering industry in assessment and utilization of technologies being implemented under the EPIC program. Some suggestions in this regard include:

1. The EPIC technologies should be categorized by EPIC program use type. Such categories could include transmission and distribution, distributed generation, demand response, building energy technologies, industrial technologies, etc. This allows the technologies to be more easily presented to correct departments of the respective engineering firms.

2. The EPIC technology developers should be categorized within EPIC by location, for convenient interface with engineering industry representatives. In such interface, the objective should be to involve technology developers with mid-level staff of the engineering firms. In such an orchestrated program of interface, the technology developers may learn of applications for their technologies which they would not otherwise have conceptualized, and which might be more promising than those originally envisioned. In parallel, the EPIC technology developer may learn that certain of their market or application assumptions are not workable from the engineering perspective, and hence are unlikely to be successful.

3. There should be an understanding by EPIC technology developers of the industrial and regulatory standards and certifications required to be met in order for a technology to be used in a project, particularly in California. This information can be distributed by the California Energy Commission as a part of all EPIC project awards. If a technology cannot be permitted, or must undergo extremely multi-year expensive testing by regulatory agencies, it may not be a viable technology to pursue.

4. The EPIC technology developers should also have a full understanding of the candidate markets for their technology, particularly in the IOU sector, which has a stake in the success of the EPIC program. Consequently, there should be an ongoing briefing from the IOUs for developers regarding use of EPIC technologies in the current or upcoming SCE, SDGE and PG&E projects throughout California.

5. As the technologies are evolving within the EPIC program, there should ultimately be a series of funded "mentor-protégé"-type relationships established between the technology firms and their engineering firm colleagues. This would involve regular meetings, at least quarterly, where the engineers would visit the technology firm to see its operation, and the technology firm would visit the engineering firm to discuss application of the technologies within engineering projects. This could be conducted with minimal funding per relationship, but it would not otherwise happen on a volunteer basis.

6. These relationships and successful technology system deployments could then be showcased through engineering industry associations California-wide. Principal among these would be the American Council of Engineering Companies (ACEC), which represents approximately 1,200 firms in California.

7. Finally, the EPIC program could certainly involve many of the State's disadvantaged business enterprises (DBE), which may include minority-owned (MBE), women-owned (WBE) or disabled veteran-owned (DVBE) firms. The success of these firms is a priority to the California Public Utilities Commission, and to their Investor-Owned Utilities. It may be that emerging EPIC firms could sell their new technology products into the IOU projects through DBE firms, which often are being asked to perform as much as 40% of some of the largest IOU projects. A formal process to engage these DBE firms in the EPIC program is now underway at some firms, including Burns & McDonnell in Southern California.

Through this suggested series of approaches, the firms funded under the EPIC program would have a much greater chance at success for their technologies and systems in California.

About the Author

William F. Lyte, Business Development Manager of Burns & McDonnell, Brea, California, has spent the majority of his career with major consulting engineering firms in business development and technical roles. Sectors within which he has worked have included ports and intermodal, railroads, transit, roadways and highways, electric and gas utilities, petroleum production and refining, water/wastewater, science and technology, renewable energy, and real estate development. He represents the American Council of Engineering Companies (ACEC) on the board of the state/federal intermodal organization California Marine and Intermodal Transportation Advisory Committee (CALMITSAC), where he founded and chairs their Technology Committee.

In addition, Mr. Lyte has led federal technology commercialization projects in association with NASA/JPL, built three innovation clusters (one in association with Caltech/JPL, a second at the Ports of Los Angeles and Long Beach, and a third involving the water/energy nexus). He also managed the U.S. operations of a marine hydrokinetic technology firm involving national outreach to federal and state agencies, public utilities and the U.S. military.

Burns & McDonnell is one of the largest U.S. energy engineering, procurement and construction firms. The firm is consistently ranked in the top five firms nationally in electric transmission and distribution, renewable energy, conventional power generation (all categories), and petroleum refining. In addition, Burns & McDonnell is a leader in building energy commissioning, currently working with the U.S. military globally, and nationally with major defense contractors and telecommunications firms. In California, since 2008, Burns & McDonnell has served as the owner's engineer for San Diego Gas & Electric on the $2.5 billion Sunrise Power Link project, and in a similar role for SCE on the $2.5 billion Tehachapi Renewable Transmission Project. It works extensively with PG&E on its energy projects, and has also been involved with California solar, wind and marine energy projects. From the Brea office, Mr. Lyte is directing the outreach efforts of Burns & McDonnell to the disadvantaged business enterprise (DBE) community on behalf of SCE, including their involvement in the EPIC program.